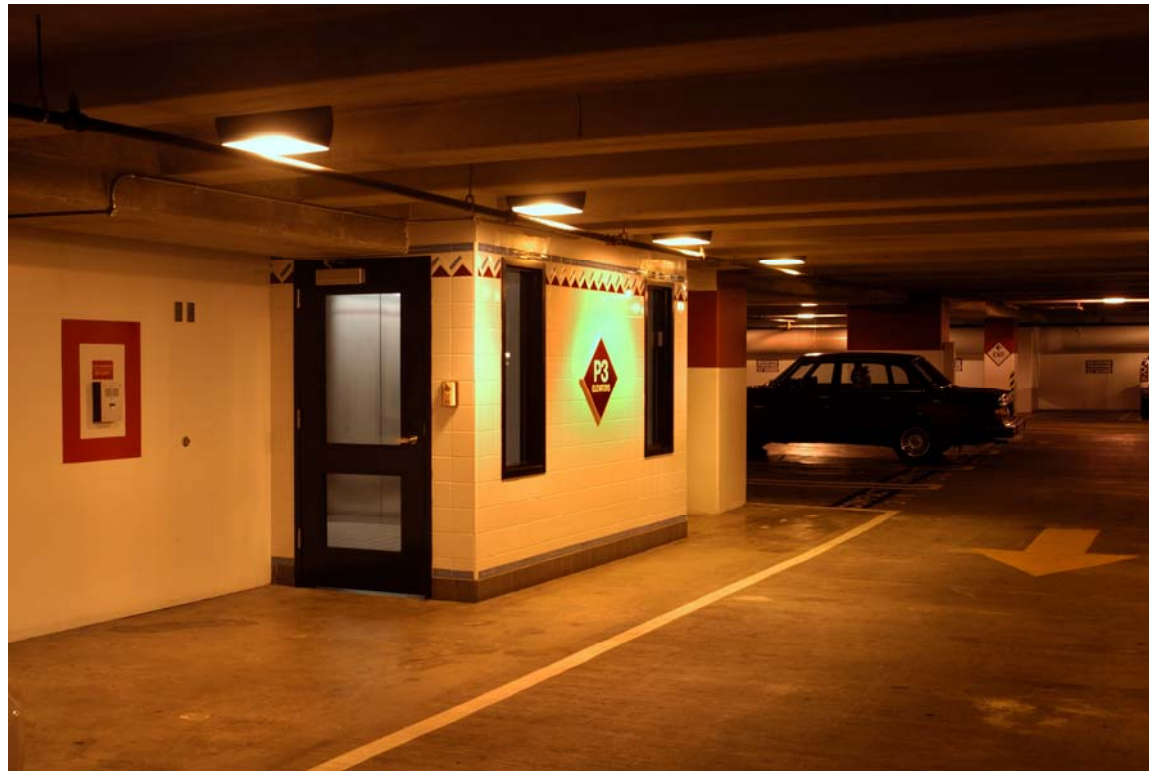


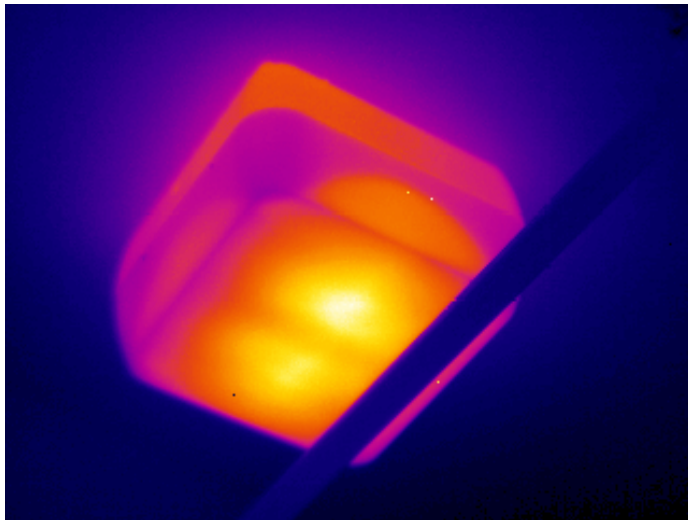
# Garage Lighting Project

June 24, 2004

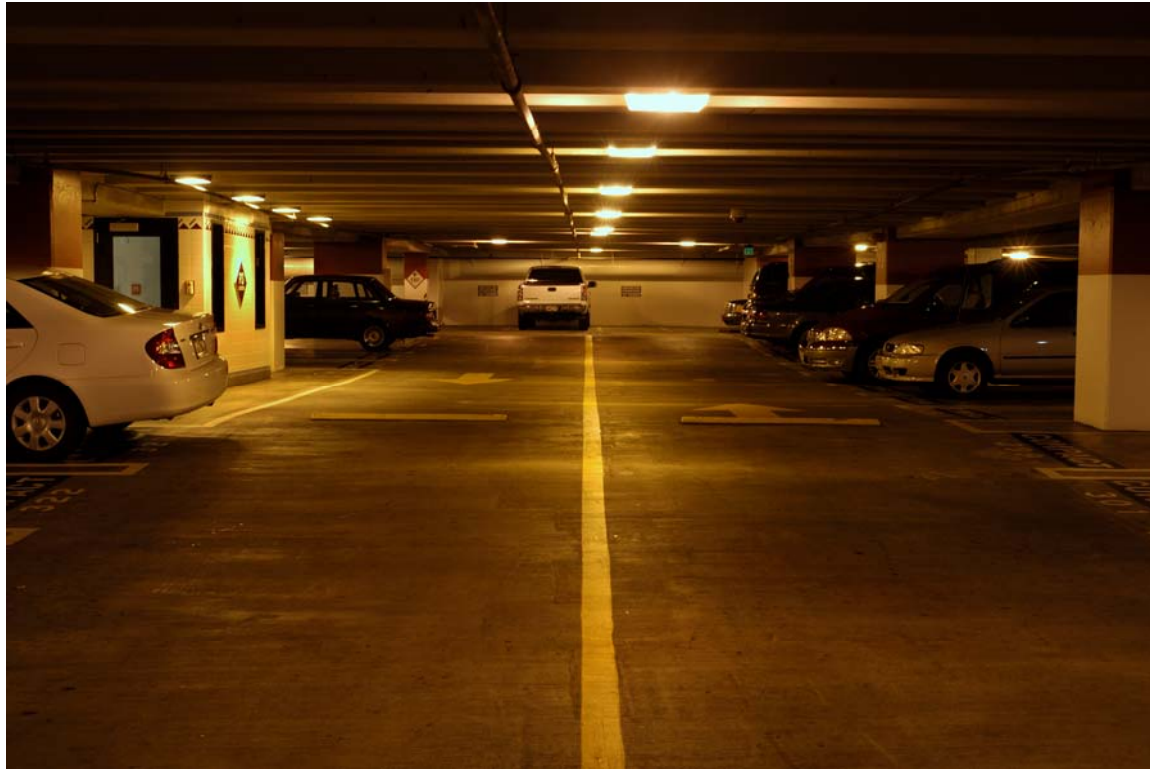
**Picture 1:** *The Challenge was to have the design team find solutions to, a) reducing heat, b) improving visual acuity, c) reduce the number of fixtures, d) reduce energy use, d) all at a reasonable cost to ownership.*



*Picture 2 & 3: The existing 234 HPS fixtures garage were creating 204F (95.8C) heat per fixture, leading to excessive heat being felt by tenants, discoloring and cracked lenses.*



*Picture 4: Shows the HPS fixtures poor color rendition and the need for extra fixtures to provide necessary foot-candles.*



***Picture 5** To improve Energy Efficiency it was decided that we would install an Induction 85w fixture. ASHRAE 90.1-1999 allows a lighting power density of .24w/sq.ft. Induction gave us the ability to remove four fixtures per floor thus consuming 0.12w/sq.ft (234 fixtures X 85w / 162,416 sq. ft.), a “50% better than code”. We exceeded our energy goals with a 48% KWH drop per fixture/year, which translates into \$81.81 saving per fixture/year. A rebate of \$58.00 per fixture was also achieved.*



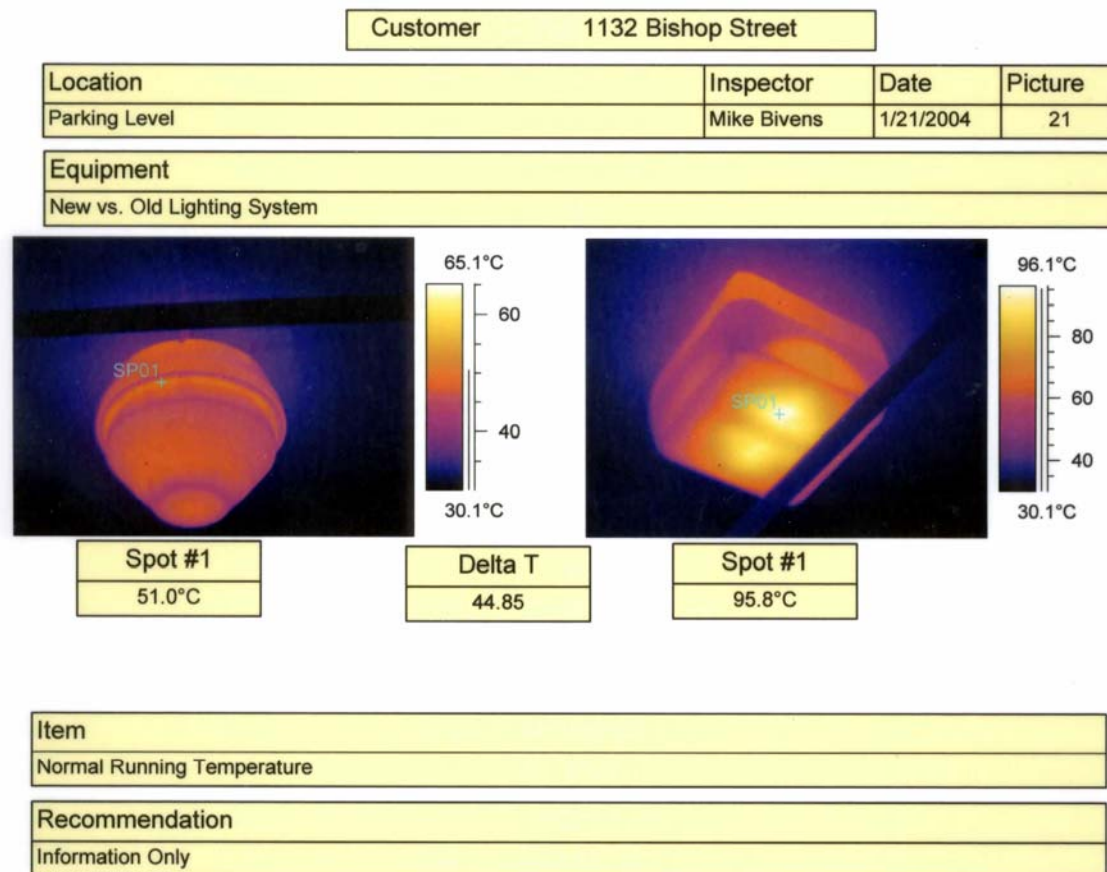
*Picture 6 The Visual Comfort in the garage improved, tenants report being able to identify cars and entryway far more easily.*

*Environmentally the Induction Light Fixture has an estimated life of 100,000 hours, produces heat of only 51 degrees C, has no ballast and is backed by a Philips warranty for five years.*





**Picture 7:** Is a Digital Infrared photo shows the burning temperature difference between the Induction Fixture and the HPS. Delta “T” per fixture is 44.85 Degrees C.



Colliers Monroe Friedlander Management and  
1132 Bishop St. Building was the first to  
install the Induction Lighting System in the  
State of Hawaii.

We have also been recently nominated to  
compete for an International Lighting design  
award for this project through IIDA  
(International Illumination Design Awards)